Original Research Article

A cross sectional study on health status and prevalence of risk factors of non-communicable diseases among auto rickshaw drivers of Hyderabad, Telangana

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ABSTRACT

Background: Auto rickshaws form 10-20% of daily motorized urban transport and ensure connectivity and easy access throughout congested Indian cities. Harmful lifestyles practiced by auto rickshaw drivers like irregularity of meals, bad posture while driving, sedentary lifestyle predisposes them to many gastrointestinal, respiratory, musculoskeletal, cardiovascular diseases. This study was taken to assess the risk factors of non-communicable diseases among of auto rickshaw drivers. Objectives of the study were to estimate the proportion of various non-communicable diseases among study population and to assess various risk factors for non- communicable diseases among study population.

Methods: A cross sectional study was carried out among 100 auto rickshaw drivers, aged above 20 years commuting at bus terminus and railway station in Hyderabad, Telangana using a predesigned questionnaire from May to July 2018.

Results: The mean age of the study population was found to be 41.58±10.9 years. Around 14% of study subjects had history of diabetes mellitus and 15% hypertension. About 69% were overweight or obese, 41% had refractive errors and majority had musculoskeletal problems. The mean duration of physical activity was found to be 35±7 minutes/day.

Conclusions: The prevalence of cardio vascular disease risk factors i.e. tobacco smoking, sedentary lifestyle, obesity was found to be quite high among auto rickshaw drivers. Early precautionary measures, regular medical check-up and prompt interventions are necessary for managing risk factors.

Keywords: Auto rickshaw drivers, Non-communicable diseases

INTRODUCTION

Auto rickshaws are relatively cheaper and easily available mode of public transport in middle income countries. They form 10-20% of daily motorized urban transport and ensure connectivity and easy access throughout congested Indian cities.[1]

The environment in which drivers spend their majority of time is polluted, noisy and dangerous. Auto drivers are exposed to harmful gases, whole body vibration, harmful lifestyle and irregular meals.[1]

Further harmful lifestyle is practiced like irregularity of meals, no proper restrooms, bad posture while driving and stressful occupational conditions are found to be

associated with many gastrointestinal, respiratory, musculoskeletal, cardiovascular and increase probability of disability or illness like hearing impairment and lowering efficacy of ocular system.[2]

Sitting in driving position exerts considerable force on spine and can cause number of problems with skeletal system, in particular, back pain, headache, stress and general stiffness. The incidence of smoking, drinking is also higher among auto rickshaw drivers which poses risk to non-communicable diseases.[3]

Lower literacy levels and lack of awareness among rickshaw drivers about the various health risks has led to lower periodic health examinations. Despite their long working hours and challenging occupational conditions, research on such occupational groups is sparse. This study aims to assess the prevalence of risk factors for non-communicable diseases among auto rickshaw drivers.

Objectives of the study were to estimate the proportion of various non-communicable diseases among study population and to assess various risk factors for non-communicable diseases among study population.

METHODS

Study design: Cross sectional study.

Study area: Bus terminus (Mahatma Gandhi bus station) and railway station (Secunderabad railway station), Hyderabad, Telangana.

Study population: Auto rickshaw drivers of Hyderabad, Telangana.

Study tools: Predesigned, pre tested questionnaire, weighing machine, measuring tape, stadiometer, sphygmomanometer, stethoscope.

Sample size: 100 (one hundred).

Inclusion criteria: Auto rickshaw drivers above 20 years of age, with more than 6 months of experience as auto driver.

Exclusion criteria: Drivers not willing to take part in the study.

Sampling technique: Simple random sampling.

Study duration: 2 months (May 2018 to July 2018).

Data collection and analysis: Data was collected and analyzed using MS Excel and open Epi. Descriptive statistics were calculated.

Ethical considerations: Ethical clearance certificate was obtained from institutional ethics committee prior to the

start of the study. Informed consent was taken from the study subjects.

RESULTS

A total of 100 auto rickshaw drivers were enrolled into the study. The study findings are as follows.

Table 1: Distribution of study population according to socio-demographic profile.

	Number	%
Age (in years)		
21–30	16	16
31–40	36	36
41–50	29	29
51–60	14	14
61–70	5	5
Total	100	100
Religion		
Hindus	81	81
Muslims	18	18
Christians	1	1
Total	100	100
Educational status		
Illiterate	31	31
Primary school	16	16
Middle school	18	18
Secondary/high school	29	29
Graduate	6	6
Total	100	100
Total family income (in rupees)		
4000	2	2
4000–6000	12	12
6000–8000	10	10
>8000	76	76
Total	100	100
Socioeconomic status (as per modified Kuppuswamys classification)		
Class IV (upper lower)	94	94
Class III (lower middle)	6	6
Total	100	100
Marital status		
Married	93	93
Unmarried	7	7
Total	100	100

In this study, maximum study participants were in the age group of 31-40 years (36%); followed by 41–50 years (29%); sixteen percent of study participants were in the age group of 21–30 years. The mean age of the study population was found to be 41.58±10.9 years. All the auto rickshaw drivers were males (100%). Majority of them belonged to hindu religion (81%); thirty one percent of study subjects were illiterates and 29% were educated till high school. The total family income in majority of the study subjects was >8000 rupees. Around 94% of

study subjects belonged to upper lower socio economic status (class IV) and 6% belonged to lower middle (class III) socio economic status as per modified Kuppuswamy's classification. Ninety three percent of study subjects were married and 7% were unmarried.

In around 85% of study subjects driving auto was full time occupation while 15% of study participants did it as their part time occupation.

In this study it was observed that 44% of auto rickshaw drivers work for 8–10 hours a day, 39% work for 10-12 hours a day; 11% work for <8 hours a day and 6% work for >12 hours a day.

In the present study it was found that 34% of study subjects had habit of smoking cigarettes, 60% of them had habit of consuming alcohol and 33% of them had the habit of chewing tobacco/gutkha. Among those who were smokers, majority (38.2%) of them smoked less than 10 cigarettes per day; among those who consumed alcohol 63.3% of them consumed <100 ml/day. Around 45.5% of study subjects chewed around 1-5 gutkha packets per day and 42.4% of them consumed 6–10 packets/day.

Table 2: Distribution of study population according to history of addictions.

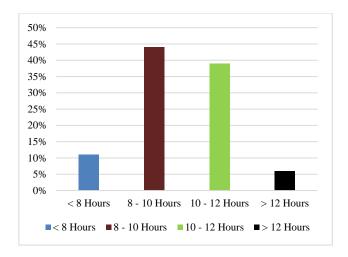|	Number	%
Smoking		
Yes	34	34
No	66	66
Total	100	100
No. of cigarettes/day		
<10	13	38.2
1 pack (=10)	10	29.4
2 packs	3	8.8
≥3 packs	8	23.6
Total	34	100
Alcohol Consumption		
Yes	60	60
No	40	40
Total	100	100
Alcohol consumption/day		
<100 ml/day	38	63.3
100–150 ml/day	2	3.3
>150 ml/day	10	16.7
Occasional (<100 ml/week)	10	16.7
Total	60	100
Tobacco chewing		
Yes	33	33
No	67	67
Total	100	100
Tobacco chewed/day		
1–5 packets	15	45.5
6–10 packets	14	42.4
>10 packets	4	12.1
Total	33	100

Figure 1: Distribution of study population according to work hours per day.

In this study it was found that 76% of study subjects had homemade food and 24% of them consumed food outside every day. Around 2% of study subjects skipped their lunch meals every day.
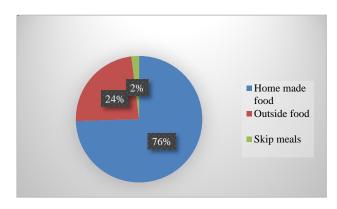

Figure 2: Distribution of study population according to the food consumed.

In this study, based upon their history, it was found that, 14% of study subjects diabetes mellitus, and 15% had hypertension. Around 34% of study subjects had frequent history of headaches (>3 times/week). Around 13% of the study subjects had history of cough, 4% had history of difficulty in breathing. Musculoskeletal problems were very common (65%) among the study population. Among the musculoskeletal problems, lower backache (51%) was most common followed by lower limb pains (32%). Around 16% of study subjects complained of indigestion and 4% complained of gastric burn.

Forty two percent of study population complained of pain in lower limbs due to vibrations arising from vehicular engine. Around 22% of study subjects complained of burning sensation/redness in eyes by evening every day and 12% complained of watering of eyes. Forty one percent of study population had refractive errors and only 18% of study subjects used glasses. Around 12% of study population had undergone major surgery in last 1 year.

Table 3: Distribution of study population according to health status/morbidities (multiple morbidities were found in few study subjects).

	Number	%
History of chronic illness		
Yes	27	27
No	73	73
Total	100	100
Chronic illnesses		
Diabetes mellitus	14	14
Hypertension	15	15
Hypotension	1	1
Facial paralysis	1	1
Seizures	1	1
Polio	1	1
Frequent headaches (>3 times/week)	34	34
Respiratory problems		
Dysopnea/ Difficulty in breathing	4	4
Bronchial asthma	2	2
Cough	13	13
Chest pain	1	1
Musculoskeletal problems		
Neck pain	22	22
Lower Backache	51	51
Lower limb pain	32	32
Upper limb pain	1	1
Gastro intestinal problems		
Indigestion	16	16
Stomach pain	1	1
Gastric burn	4	4
Pain in the limbs due to vibrations	42	42
Eye problems		
Watering of eyes	12	12
Blurring of vision	9	9
Redness/burning sensation of eyes	22	22
Difficulty in night vision	12	12
Refractive errors	41	41
Myopia	27	27
Hypermetropia	12	12
Myopia+hypermetropia	2	2
History of major surgery in last 1 year		
CABG (coronary artery bypass graft)	3	3
Stent	1	1
Plating for fracture of limb	1	1
Hernia	2	2
Vasectomy	1	1
Thrombectomy	1	1
Lithotripsy for renal stones	1	1
Cataract	2	2

Table 4: Distribution of study population according to body mass index.

Body mass index (kg/m^2)	Number	%
Under weight (<18.5)	4	4
Normal (18.5–24.9)	27	27
Overweight (25–29.9)	34	34
Obese class I (30–34.9)	31	31
Obese class II (35–39.9)	2	2
Obese class III (>40)	2	2
Total	100	100

In this study, on examination it was found that, 34% of study subjects were overweight; 31% of them were obese class I and 27% of them were normal. The waist hip ratio was >0.9 in 95% of study subjects and <0.9 in only 5% of study subjects.

Table 5: Distribution of study population according to hypertensive state and physical activity.

	Number	%
Hypertension (>140/>90 mmHg)		
Present	63	63
Absent	37	37
Total	100	100
Physical activity (>30 minutes/day)		
Present	11	11
Absent	89	89
Total	100	100

In the present study, it was found that 63% were hypertensives (upon 3 readings taken 5 minutes apart) i.e. systolic blood pressure >140 mmHg and/or diastolic blood pressure >90 mmHg. The mean systolic blood pressure was found to be 137.7±18.5 mmHg and the mean diastolic blood pressure was found to be 91.7±12.9 mmHg. The mean duration of physical activity was found to be 35±7 minutes/day.

DISCUSSION

In this study the mean age of auto rickshaw drivers was found to be 41.58±10.9 years. This finding concurred with a study conducted by Chaudhary et al, the Mean age of ARDs was 41.70±9.05 years.[4] This finding was also similar to a study conducted by Melwani et al where the mean age of study participants was 39.17±10.38 years.[2]

In the present study it was found that around 94% of study subjects belonged to upper lower socio economic status (class IV) and 6% belonged to lower middle (class III) socio economic status as per modified Kuppuswamy's classification. This finding was different when compared to a study by Melwani et al where majority (40.33%) of study participants belonged to lower middle SES.[2]

In this study 31% of study subjects were illiterates and 29% were educated till 10th standard. This finding was almost similar to a study by Melwani et al where 25% of study participants were educated till 10th standard while 22% participants were illiterate.[2]

In the present study, the average working hours was found to be 10.5 hours which was similar to a study by Chaudhary et al where the average work hours were 11.5 hours.[4]

In the present study it was found that 34% of study subjects had habit of smoking cigarettes, 60% of them had habit of consuming alcohol and 33% of them had the habit of chewing tobacco/gutkha. This findings were comparable to a study conducted by Girish et al wherein it was found that cardiovascular risk factors among auto rickshaw drivers were current smokers 35.45%, current alcohol consumption 43.6%.[5]

In this study it was found that, 14% of study subjects had history of diabetes mellitus and 15% were hypertensives. This finding was different to a study in North Kerala in which 21% of study subjects were found to be hypertensives.[5] In this study it was found that around 13% of the study subjects had history of cough, 4% had history of difficulty in breathing. These findings were different when compared to a study in Delhi in which 77% of them had cough and the other major symptoms being breathlessness, mild to moderate obstructive pulmonary disease and passage of black sputum in the morning.[6]

In the present study Musculoskeletal problems were very common (65%) among the study population. Among the musculoskeletal problems, lower backache (51%) was most common followed by lower limb pains (32%). This finding concurred with a study in Agartala where musculo-skeletal pain that comprises of knee, back and shoulder pain were the most common in frequency occurring among all age groups of auto rickshaw service providers.[3] Back pain was also found as the commonest health problem in a study conducted in Karachi.[7]

In this study it was found that around 22% of study subjects complained of burning sensation/redness in eyes by evening every day and 12% complained of watering of eyes. This finding was similar to a study conducted by Melwani et al where 12% participants complained of lacrimation while driving in day.[2]

In this study it was found that, 34% of study subjects were overweight; 31% of them were obese class I and 27% of them were normal. The waist hip ratio was >0.9 in 95% of study subjects and <0.9 in only 5% of study subjects. This finding was similar to a study conducted by Chaudhary et al in which 14.86% subjects were overweight and another 3.38% had obesity.[4] This study findings were also similar to a study in North Kerala

where overweight and obesity was 40.6% and central obesity 32.1%.[5]

In the present study, it was found that 63% were hypertensives (upon 3 readings taken 5 minutes apart) i.e. systolic blood pressure >140 mmHg and/or diastolic blood pressure >90 mmHg. The mean systolic blood pressure was found to be 137.7±18.5 mmHg and the mean diastolic blood pressure was found to be 91.7±12.9 mmHg. The present study findings were different when compared to study by Chaudhary et al and a study in North Kerala and where 21.8% and 35.14% of study subjects were hypertensives respectively.[4,5]

With this study, we found that only 15% were known hypertensives but with our screening for hypertension we could find around additional 48% of hypertensives which were present in community as subclinical cases. This signifies the importance of periodic screening so as to identify people at risk at the earliest.

CONCLUSION

Our study throws some light on working condition and health status of auto-rickshaw drivers. Smoking and consumption of Alcohol was common among study participants. The prevalence of cardio vascular disease risk factors i.e. tobacco smoking, sedentary lifestyle, obesity was found to be quite high among auto rickshaw drivers. Health related issues like backache, neck pain and headache elucidates occupational health hazard in auto rickshaw drivers due to vibrations arising due to driving and sitting for prolonged hours while driving and waiting for customers.

Recommendations

- Early precautionary measures, regular medical check-up and prompt interventions are necessary for managing risk factors.
- There is need for creating awareness regarding health promotion and regular medical check-up.
- Further studies on larger population are also recommended to quantify the impact of these risk factors for future occurrence of CVDs among auto-rickshaw drivers.

Limitations of study

The study was conducted on a very small sample size; hence all the findings cannot be generalized to the whole community.

Not all the known non communicable diseases risk factors like presence of hypercholesterolemia and diabetes mellitus (DM) were assessed due to financial constraints; while effects of dietary factors could not be assessed due to irregularity of diet and lack of required time for dietary assessment.

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